



**ORIGINAL RESEARCH PAPER**

**Ophthalmology**

**A CASE SERIES REPORT OF OCULAR FIRECRACKER INJURIES DURING DIWALI FESTIVAL IN A TERTIARY CARE HOSPITAL IN SOUTH INDIA**

**KEY WORDS:** Diwali, Ocular Injuries, Hyphema, Corneal Laceration, Parental supervision

**Dr. Yeokeshwaran. R**

Post Graduate Resident, Department of Ophthalmology, Government Dharmapuri Medical College Hospital, Dharmapuri, Tamil Nadu, India

**Dr. M. Sivaraman**

Ms, Associate Professor, Department of Ophthalmology, Government Dharmapuri Medical College Hospital, Dharmapuri, Tamil Nadu, India

**ABSTRACT**

**Summary:** DIWALI is an important festival celebrated in India, of which Fire Crackers form an essential part. Fire crackers cause serious and irreparable damage to vision. We report a series of 50 fire cracker injuries presenting to a tertiary care hospital in South India during a single week to highlight the importance of firecrackers as an important cause of ocular injuries in India. The injuries reported ranged from conjunctival or corneal burns to globe rupture with interventions ranging from ocular wash to repair of globe perforation. Most of the injuries were due to Negligence. Lack of Awareness of Safety measures and not following them were main reasons for Ocular Fire cracker injuries. Regulating the quality of fire crackers, parental supervision and promoting safe usage of fire crackers will go a long way in reducing the incidence of ocular injuries due to them.

**AIM:**

To report a case series of firecracker injuries during the DIWALI season to highlight the importance of firecrackers as a cause of ocular injuries in India.

**Study Design:**

Observational Case Series Study

**Place of Study:**

Department of Ophthalmology, government Dharmapuri Medical College Hospital, Dharmapuri, Tamil Nadu, India- 636701

**Duration of Study:**

ONE WEEK OF DIWALI FROM 21-10-2022 TO 27-10-2022

**Sample Size:** 50

**Study Group:**

Patients presenting to the Ophthalmology OPD and Casualty fulfilling the inclusion criteria are selected after getting proper informed consent.

**Inclusion Criteria:**

1. All Patients presenting to the ophthalmology OPD and Casualty during the DIWALI week (21-10-2022 to 27-10-2022) with fire cracker injury to the eye.
2. Patients of All age group and all genders are included in this study.

**Exclusion Criteria:**

1. Patients with injury to the eye but not due to fire crackers are excluded.
2. Patients not willing for Informed consent and ocular examination are excluded.

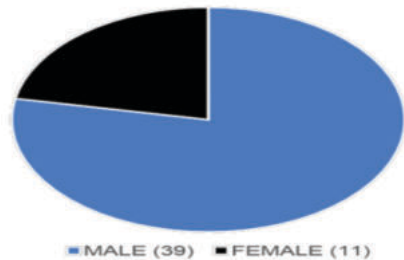
**MATERIAL AND METHODS:**

Patients fulfilling the Inclusion criteria after getting the informed consent are evaluated for

- Visual Acuity by Snellen Chart
- Diffuse Torch Light Examination
- Slit Lamp Examination
- Indirect Ophthalmoscopy
- Gonioscopy
- B Scan Ultrasonogram
- CT Orbits

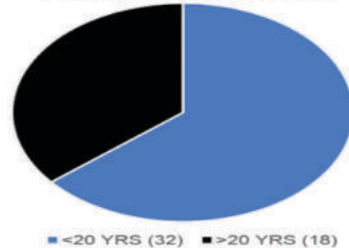
**RESULTS**

**AFFECTED PATIENTS**



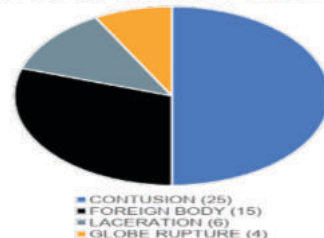
**Sex Distribution:**

**AGE DISTRIBUTION**



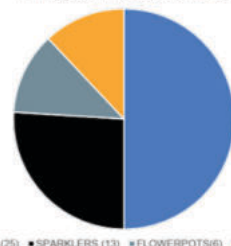
**Age Distribution:**

**TYPES OF OCULAR INJURIES**

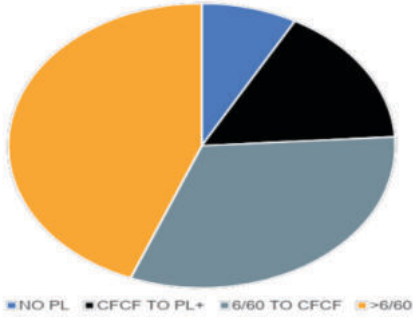


**Types of Ocular Injuries:**

**TYPES OF FIRECRACKERS**



**Types of Fire Crackers:**



**Presenting Visual Acuity**

**CLINICAL PICTURES**



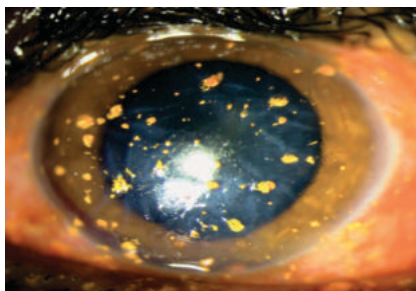
**Globe Rupture**



**Total Hyphema**



**Periorbital Contusion**



**Corneal Foreign Body**

**DISCUSSION**

- Most of the patients were below the age of 20 years.
- where victims were mostly those who were actively involved in igniting the firecracker, more than half of the

victims in our study were bystanders.

- most common firecracker causing injury in our study were bombs followed by sparklers
- Many of the injuries were caused as a result of negligence of those igniting the firecrackers.
- Lack of knowledge about safety measures or not following them was a reason for eventualities.

**CONCLUSION**

- so many cases were seen in a single centre highlights the enormous health importance of regulating firecracker use and enforcing safety precautions.
- The single most effective measure is to restrict the fireworks to public open spaces (such as parks or playgrounds).
- Regulating the quality of firecrackers and promoting safe use via schools and media will also have a positive impact.

**REFERENCES**

1. Kuhn FC, Morris RC, Witherspoon DC, Mann L, Mester V, Modes L, et al Serious fireworks-related eye injuries *Ophthalmic Epidemiol.* 2000;7:85-6
2. Mansouri MR, Mohammadi SF, Hatef E, Rahbari H, Khazanehdari MS, Zandi P, et al The Persian Wednesday Eve Festival "Charshanbe-Soori" Fireworks Eye Injuries: A Case Series *Ophthalmic Epidemiol.* 2007;14:17-24
3. Witsaman RJ, Comstock RD, Smith GA. Pediatric fireworks related injuries in the United States: 1990-2003 *Pediatrics.* 2006;118:296-303
4. Puri V, Mahendru S, Rana R, Deshpande M. Firework injuries: A ten-year study *J Plast Reconstr Aesthet Surg.* 2008;62:1103-11